

RIGA TECHNICAL UNIVERSITY

FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

INSTITUTE OF APPLIED COMPUTER SYSTEMS

“Technology of Large database”

Practical task #

**Exam question**

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# Task

There are tables: SHOPS(S\_NUM, S\_NAME, TEL), GOODS(G\_NUM, G\_NAME, G\_QUANTITY, G\_PRICE, NUM\_SHOP).

Create **object method**, which has a parameter shop name and outputs the total amount of goods in shop. Using **OSQL and method,** write a query: what the total amount of goods in shop “Centrs”.

### **GRAPH**

|  |
| --- |
| **A close up of text on a whiteboard  Description generated with high confidence** |

### **Creation**

|  |
| --- |
| CREATE TYPE SHOPS\_TYP\_1 AS OBJECT (  S\_NUM NUMBER,  S\_NAME VARCHAR2(30),  TEL VARCHAR2(20)  );  /  CREATE TYPE GOODS\_T\_1 AS OBJECT(  G\_NUM NUMBER,  G\_NAME VARCHAR2(30),  G\_QUANTITY NUMBER,  G\_PRICE NUMBER,  NUM\_SHOP REF SHOPS\_TYP\_1,  MEMBER FUNCTION total RETURN NUMBER  );  /  CREATE OR REPLACE TYPE BODY GOODS\_TYP\_1 AS    MEMBER FUNCTION total RETURN INTEGER IS  g\_result GOODS\_TYP\_1.G\_NUM%TYPE;  BEGIN  SELECT COUNT(G\_NUM) INTO g\_result  FROM GOODS  WHERE GOODS.NUM\_SHOP.S\_NAME = 'Centrs';  dbms\_output.put\_line('Total amount of goods: '|| g\_result);  RETURN total;  END total;  END;  /  CREATE TABLE GOODS OF GOODS\_TYP\_1; |

### **Input of data**

|  |
| --- |
|  |

### Output of data

|  |
| --- |
| **QUERY\_1#:**  SELECT Value(A).total() from GOODS A; |

# Object reference

### **GRAPH**

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| --- |
| **A close up of text on a whiteboard  Description generated with very high confidence** |

### Creation

|  |
| --- |
| CREATE TYPE FACULTY\_TYP AS OBJECT(  F\_number NUMBER,  F\_name VARCHAR2(30),  F\_tel VARCHAR2(30)  );  /  CREATE TYPE STUDENT\_TYP AS OBJECT(  St\_number NUMBER,  St\_name VARCHAR2(30),  St\_surname VARCHAR2(30),  Faculty REF FACULTY\_TYP  );  /  CREATE TABLE FACULTY\_TAB OF FACULTY\_TYP;  CREATE TABLE STUDENT\_TAB OF STUDENT\_TYP; |

### Input of data

|  |
| --- |
| INSERT INTO FACULTY\_TAB VALUES(201, 'COMPUTER SCIENCE', '+371 28786188');  INSERT INTO FACULTY\_TAB VALUES(202, 'TELECOMMUNICATION', '+371 28786188');  INSERT INTO FACULTY\_TAB VALUES(203, 'DITF', '+371 28786188');  INSERT INTO STUDENT\_TAB VALUES(1001, 'SANJAR', 'ESHONOV', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 203));  INSERT INTO STUDENT\_TAB VALUES(1002, 'JOHN', 'SMITH', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 203));  INSERT INTO STUDENT\_TAB VALUES(1003, 'JANE', 'MARRY', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 203));  INSERT INTO STUDENT\_TAB VALUES(1004, 'SANJAR', 'ESHONOV', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 201));  INSERT INTO STUDENT\_TAB VALUES(1005, 'JOHN', 'SMITH', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 20));  INSERT INTO STUDENT\_TAB VALUES(1006, 'KUTPUT', 'BAJAN', (SELECT REF(F) FROM FACULTY\_TAB F WHERE F.F\_number = 203)); |

### Output of data

|  |
| --- |
| **QUERY\_1#:**  SELECT COUNT(S.St\_number) FROM STUDENT\_TAB S WHERE S.Faculty.F\_name = 'DITF';  A screenshot of a social media post  Description generated with very high confidence |

# Cursor

### **GRAPH**

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### Creation

|  |
| --- |
| CREATE TABLE SHOPPING(  S\_NUM NUMBER PRIMARY KEY,  S\_NAME VARCHAR2(30),  S\_ADDRESS VARCHAR2(30)  );  / |

### Input of data

|  |
| --- |
| INSERT INTO SHOPPING VALUES(1, 'ORIGO SHOPPING CENTER', 'CENTRAL STATION');  INSERT INTO SHOPPING VALUES(2, 'ORIGO SHOPPING CENTER', 'CENTRAL STATION');  INSERT INTO SHOPPING VALUES(3, 'ORIGO SHOPPING CENTER', 'CENTRAL STATION');  INSERT INTO SHOPPING VALUES(4, 'ORIGO SHOPPING CENTER', 'CENTRAL STATION');  INSERT INTO SHOPPING VALUES(5, 'ORIGO SHOPPING CENTER', 'CENTRAL STATION'); |

### Output of data

|  |
| --- |
| **QUERY\_1#:**  declare  type CURS\_VAR\_TYPE is REF CURSOR;  curs\_var CURS\_VAR\_TYPE;  type TAB\_TYPE\_1 is table of SHOPPING.S.NAME%type;  tab\_1 TAB\_TIPS\_1 := TAB\_TIPS\_1();    i number;  var\_1 number default 2;  begin  if var\_1 = 1 then  open curs\_var for select S\_NAME from SHOPPING;  for i in 1 .. 3 loop  tab\_1.extend;  fetch curs\_var into tab\_1(i);  DBMS\_OUTPUT.PUT\_LINE(tab\_1(i));  end loop;  end if;  end;  **QUERY\_2#:** |

# Object table

### **GRAPH**

|  |
| --- |
| **A close up of text on a whiteboard  Description generated with high confidence** |

### Creation

|  |
| --- |
| CREATE TYPE GOODS\_TYP AS OBJECT(  G\_NUM NUMBER,  G\_NAME VARCHAR2(30),  G\_QUANTITY NUMBER,  NUM\_SHOP NUMBER    );  /  CREATE TYPE SHOPS\_TYP AS OBJECT (  S\_NUM NUMBER,  S\_NAME VARCHAR2(30),  TEL VARCHAR2(20)  );  /  CREATE TYPE PURCHASE AS OBJECT(  GOODS\_ID NUMBER,  GOODS\_DETAILS GOODS\_TYP,  SHOP\_DETAILS SHOPS\_TYP  );  /  CREATE TABLE PURCHASE\_TAB OF PURCHASE; |

### Input of data

|  |
| --- |
| INSERT INTO PURCHASE\_TAB VALUES(1, GOODS\_TYP(501, 'T-SHIRT', 5, 501),  SHOPS\_TYP(501, 'Kurzeme', '+ 000000'));    INSERT INTO PURCHASE\_TAB VALUES(2, GOODS\_TYP(502, 'T-SHIRT', 5, 501),  SHOPS\_TYP(501, 'Kurzeme', '+ 000000'));    INSERT INTO PURCHASE\_TAB VALUES(3, GOODS\_TYP(503, 'T-SHIRT', 5, 501),  SHOPS\_TYP(501, 'Kurzeme', '+ 000000'));    INSERT INTO PURCHASE\_TAB VALUES(4, GOODS\_TYP(504, 'T-SHIRT', 5, 501),  SHOPS\_TYP(501, 'Kurzeme', '+ 000000')); |

### Output of data

|  |
| --- |
| **QUERY\_1#:**  SELECT P.GOODS\_DETAILS.G\_NAME FROM PURCHASE\_TAB P WHERE P.SHOP\_DETAILS.S\_NAME = 'Kurzeme';  A screenshot of a cell phone  Description generated with very high confidence  **QUERY\_2#:** |

# Java method

### **GRAPH**

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| --- |
| **A close up of text on a whiteboard  Description generated with high confidence** |

### Creation

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| --- |
| A screenshot of a social media post  Description generated with very high confidence |

### Input of data

|  |
| --- |
| <Books>  <Book>  <author>Sanjar</author>  <name>Java development</name>  <Book>  </Books>  create table book\_tab(  author varchar2(30),  name varchar2(30)  );  /  insert into book\_tab (author, name)  select x.author, x.name  from xmltable(  '/Books/Book'  passing xmltype(  bfilename('MY\_DIR', 'Books.xml'),  nls\_charset\_id('AL32UTF8')  )  columns id integer path '@cid',  author varchar2(30) path 'author',  name varchar2(30) path 'name'  ) x  ;  select \* from book\_tab; |

### Output of data

|  |
| --- |
| **QUERY\_1:**  **QUERY\_2:** |

# XML

### **GRAPH**

|  |
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| **A close up of text on a whiteboard  Description generated with very high confidence** |

|  |
| --- |
| <Books>  <Book>  <author>Doston</author>  <name>Java development</name>  <Book>  </Books>  create table book\_tab(  author varchar2(30),  name varchar2(30)  );  /  insert into book\_tab (author, name)  select x.author, x.name  from xmltable(  '/Books/Book'  passing xmltype(  bfilename('MY\_DIR', 'Books.xml'),  nls\_charset\_id('AL32UTF8')  )  columns id integer path '@cid',  author varchar2(30) path 'author',  name varchar2(30) path 'name'  ) x  ;  select \* from book\_tab; |